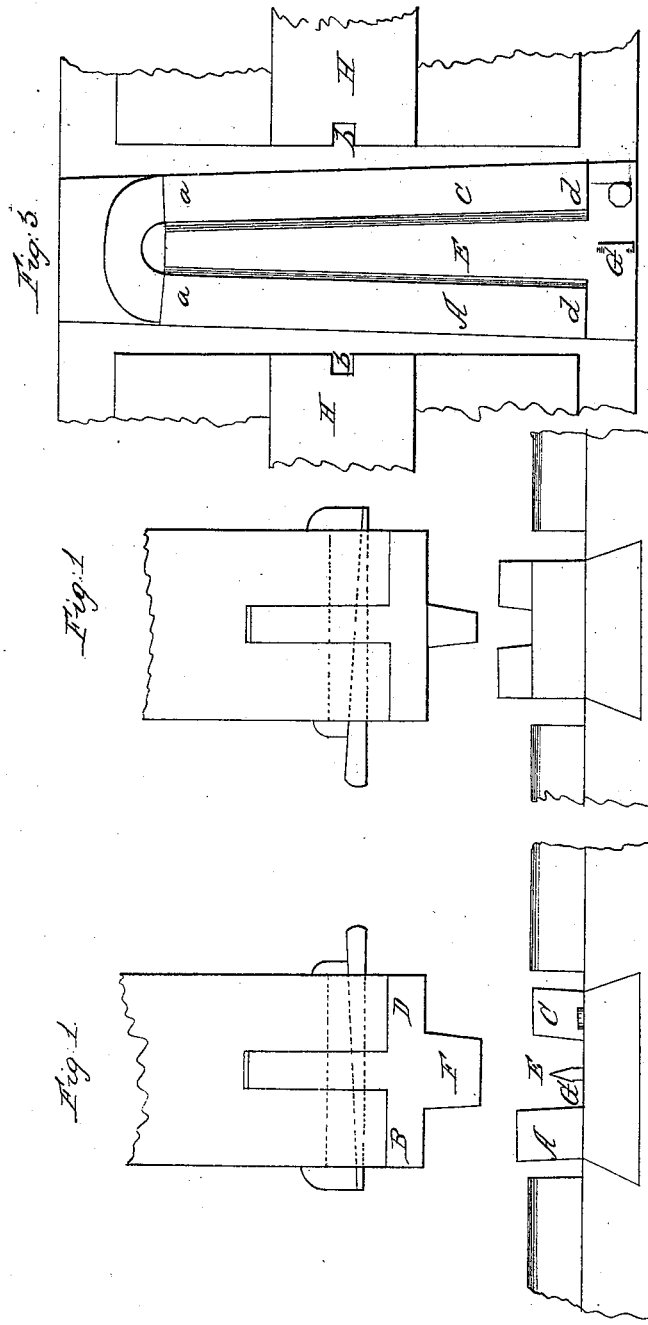
H. Baines.

Making Railroad-Track Irons.

No. 51,527. Patented Dec. 12, 1865.



UNITED STATES PATENT OFFICE.

HUGH BAINES, OF MANCHESTER, COUNTY OF LANCASHIRE, ENGLAND.

IMPROVEMENT IN DIES FOR MAKING RAILROAD-CROSSING POINTS.

Specification forming part of Letters Patent No. **51,527**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, HUGH BAINES, a native of the city of Manchester, in the county of Lancashire, in that part of the United Kingdom of Great Britain and Ireland called England, but at the present time temporarily residing in the city of Montreal, in the Province of Canada, have invented a new and useful mode of making railroad-crossing points and other articles by means of dies and counter-dies, whether the dies be movable and inserted in the face of the hammer, or be made so as to constitute a permanent face to the hammer; and I do hereby declare that the following is a full and exact description thereof.

The hammer itself may be made of any approved pattern, and need not be particularly described. In the face of the hammer I fix a die, and in the hammer-frame, or foundation below, I place a corresponding block or die, the block and dies being made of any suitable metal. The shape of the die and block will vary according to the form of the article they are designed to make.

As an example of one of the many uses claimed for my invention, the die and block illustrated in the accompanying drawings show the manner of making a railroad-point.

Of the drawings, Figures 1 1 are elevations of the hammer; Figs. 2 2, elevations and sections of the bottom block or die, and Fig. 3 a plan of the bottom block.

The two rails of which the point is to be made are placed successively on the bevel A, Figs. 2 and 3. The shoulder B, Fig. 1, is brought into contact with them, by which they receive the requisite taper for welding. The rails thus tapered are put together and heated. Then they are placed on bevel C, Figs. 2 and 3, and welded by shoulder D, Fig. 1. The point, now so far formed, is placed in the beveled cavity E, Figs. 2 and 3, and the tongue F, Fig. 1, fitting and passing into the cavity E, finishes it ready for use.

The cavity E is intended to have the shape of the point. Its sides are made slightly flaring, so that the point, after being shaped in the cavity by means of the tongue F of the dies, can be readily lifted out.

G is a wedge-like projection rising from the front part of the cavity E on its middle line, whose office is to spread out the sides of the point and cause them to reach and come against the sides of the cavity by becoming embedded in the broad end of the point.

In the plan view, Fig. 3, are seen grooves *b b*, formed in the inner faces of the standards H H, which grooves receive tongues projecting from the sides of the hammer-stock, so as to guide the hammer in its movements.

The inner ends of the parts A and C of the counter-die rise gradually from their front parts, *d d*, to their inner or back parts, *a a*, and the shoulders B D of the hammer-die rise in the reverse direction, so that the space between the faces of the shoulders B or D and the faces of the parts A and C of the blocks is greater at their front parts—about the parts marked *d*—than at their rear ends. (Marked *a*.) The effect of this construction is that when a blank placed on the beveled face A is acted on by the hammer it will be brought to a tapering form, like a wedge, the thinner end being that acted on toward the end *a* of the block.

When the two blanks which go to form a point for a railway-track, by which term is meant the triangular piece of rail which is placed at the middle line where one track diverges from another, have been properly shaped by the action of the parts B and A of the apparatus, they are removed to be heated, after which they are placed on the part C of the block or counter-die, and the shoulder D of the hammer is made to act thereon, and the blanks are thereby welded into one piece. The faces of the parts B D and A C are in this manner made to give the proper shape to the sides of the point. It remains yet to bring it to the proper height and width. This is effected by placing it in the cavity E and bringing the tongue F of the hammer-die down upon it, whereby it is spread out to the proper width and brought down to the proper height or thickness.

The cavity is to be made of a width and taper equal to the required width and taper of the point; and in order to provide for the construction of different-sized points with the same hammer, the dies and counter-dies by which the necessary shapes are given may be made movable and be secured, by keys and dovetailed grooves, to the hammer and block. The letter C designates keys which secure the hammer-die to its stock.

The same general principle of operation can be applied to make crossing-wings to correspond with the points and crossings of every description, and also tongues for switches. In each of such applications it is only necessary to change the form of the dies and counter-dies so as to produce the required shape of the article to be made.

I claim—

Constructing and operating dies in the manner substantially as above set forth, for the purpose of making railroad-points.

HUGH BAINES.

Witnesses :

A. CHRISTIE,

C. SEAGUR, Jr.